

DRAFT INITIAL STUDY

Mad River Bridges Replacement Project US Route 101 Between Arcata and McKinleyville Humboldt County

KP 143.4/145.5
(PM 89.1/R90.4)

EA 01-296100



*Prepared by the
California Department of Transportation
December 2003*



Initial Study

Mad River Bridges Replacement Project

**US Route 101
Between Arcata and McKinleyville
Humboldt County**

**Hum-101-KP 143.4/145.5
(PM 89.1/R90.4)**

EA 01-296100

Submitted pursuant to Division 13, Public Resources Code

**THE STATE OF CALIFORNIA
Department of Transportation**

Date of Approval

**John D. Webb, Chief
North Region Environmental Services
California Department of Transportation**

General Information About This Document

What's in this document?

This document is a Draft Initial Study/Negative Declaration, which examines the potential environmental impacts of alternatives for the proposed project located in Humboldt County, California. The Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA), the Public Resources Code 21000 *et seq*, and the State CEQA Guidelines 14 California Code of Regulations (CCR) 15000. The document describes why the project is being proposed, the proposed project and project alternatives, the existing environment that could be affected by the project, the potential impacts of each of the alternatives and proposed mitigation measures to minimize project impacts to the environment.

What should you do?

- Please read this Draft Initial Study/Negative Declaration.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the Public Information Meeting and/or send your written comments to Caltrans by the deadline. The Public Information Meeting will be advertised through the local media. Submit comments via regular mail to: Caltrans, Attn: Deborah L. Harmon, Environmental Management Branch E-1, 1656 Union Street, Eureka, California 95501; submit comments via email to: Deborah_Harmon@dot.ca.gov.
- Submit comments by the deadline of January 9, 2004.

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies; (3) modify the project; or (4) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please contact Deborah L. Harmon at P.O. Box 3700, Eureka, California 95502, (707) 445-6416 Voice, or use the California Relay Service TTY number (707) 445-6463.

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I. SUMMARY

The California Department of Transportation (Caltrans) in conjunction with the Federal Highway Administration (FHWA) proposes to replace the northbound and southbound bridges crossing the Mad River on US Route 101 between kilometer post (KP) 143.4/145.5 (PM 89.1/R90.4) in Humboldt County (Figure 1, Location Map). The bridges are structurally deficient and do not meet current scour (pier footing erosion), seismic or geometric (e.g., road curve, lane width, etc.) guidelines. The proposed project is designed to correct these deficiencies. The bridges will remain two-lane facilities both northbound and southbound and are proposed on a new alignment abutting and paralleling the existing west alignment (preferred Alternative 2). The new bridges will be located approximately 30.5m (100 ft.) westerly of the existing structures. Two alternatives, in addition to the No Build Alternative, were considered. Alternative 1 shifts the new alignment easterly and Alternative 2 shifts the alignment westerly of the bridges. The Central Avenue on- and off-ramps will be realigned to connect to the new bridges and the northbound Central Avenue off-ramp intersection with Route 200 will be reconstructed. New right of way acquisition will be required to construct the project. One existing residence is located within the proposed new right of way and will require relocation or removal.

During construction, the existing bridges will continue to carry motorized traffic and provide interim pedestrian/bicycle access. The full capacity of the bridges will be open during peak hours.

Existing utilities are affected by the proposed project and will require relocation. In addition, seven culverts will be upgraded.

The proposed project will result in temporary and permanent impacts to environmental resources. These impacts are considered to be less than significant with proposed mitigation. Specific mitigation measures to reduce the effect of potential direct impacts to Coho and Chinook salmon, steelhead trout and designated critical habitat will be incorporated into project construction techniques and schedule. Additional proposed mitigation measures employing Best Management Practices (BMP's) and resource agency permit conditions will insure that project impacts are reduced to the maximum extent feasible. Mitigation to further reduce the potential permanent impacts to loss of agricultural lands and/or riparian vegetation corridor have also been incorporated into the project.

The proposed project has a four-year construction schedule with work programmed to commence in year 2007 with completion in year 2010. The estimated project cost is approximately \$26 million.

The following permits are required:

- California Coastal Commission Permit
- Humboldt County Local Coastal Development Permit
- Dept. of Fish and Game 1601 Streambed Alteration Agreement
- State Water Resources Control Board NPDES Permit
- US Army Corps of Engineers Section 404 Permit

II. BACKGROUND

The Mad River bridges consist of two separate bridges carrying two-lanes of traffic each north and southbound on US Route 101 between the community of McKinleyville to the north and City of Arcata to the south in Humboldt County. The first bridge crossing the Mad River was a covered wood structure constructed in the early 1900's replacing the ferry system of the late 19th century that provided access across the river. The roadway was converted from a county road to a state highway in 1921 and Caltrans replaced the wooden bridge with a steel truss structure in 1929. The bridge carried both north and southbound traffic until a separate southbound bridge was constructed in 1958 as part of the US Route 101 freeway bypass of McKinleyville. That same year, the northbound bridge was restriped to provide two traffic lanes to accommodate the new alignment. Seismic work was performed on the southbound bridge in 1987 and, since that time, only minor maintenance activities have occurred on both bridges. These bridges remain in service today.

III. PURPOSE AND NEED

The north and southbound Mad River Bridges are structurally deficient and are at the end of their useful life. River flows have scoured the pier footings exposing and undermining the bridge foundations. Additionally, the bridges do not meet current seismic guidelines. Lastly, lane and shoulder widths on both bridges, on- and off-ramp acceleration and deceleration lengths and Route 200 intersection geometrics are substandard and do not meet current design guidelines.

A. Scour Activity. The need for the bridge replacement is for public safety purposes. Caltrans' 1993 Bridge Inspection Reports indicate both bridge foundations to be unstable for calculated scour conditions (in accordance with Federal Highway Administration ((FHWA)) Technical Advisory T5140.23, 'Evaluating Scour at Bridges'). The riverbed beneath the northbound bridge has been reduced in elevation by 4.5m (15 ft.) since construction in 1929 and by 1.8m (6 ft.) since 1958 for the southbound bridge. Gravel extraction operations have occurred upstream of the bridges over the last 40 years. Impacts resulting from the removal of riverbed materials may have contributed to the rate of scour over time. Bridge pier size and location and natural river hydrodynamics may also contribute to scouring. As a result, bridge pier foundations are being exposed. Undermining of the pier foundations can lead to unstable bridge conditions with possible collapsing of the structures.

The north and southbound structures have been listed in the Structure Replacement and Improvement Needs (STRAIN) report since 1991 targeting bridge replacement by 1994/1995.

B. Seismic Improvements. Since the northbound structure was constructed in 1929 and the southbound structure constructed in 1958, neither bridge meets current seismic design guidelines even though the southbound bridge was seismically retrofitted in 1987. However, no retrofitting of the northbound bridge has ever occurred. The proposed bridges will be designed to withstand the maximum credible seismic event for the project location and will be designed to meet current seismic design guidelines.

C. Collision Data. Table 1 below summarizes the collision data from the Traffic Accident Surveillance and Analysis System (TASAS) Table “B” for the five-year period from April 1, 1997 through March 31, 2002. The table shows the actual collision rates for each highway segment and statewide average collision rates for similar type facilities. Collision rates at the project site on US Route 101 are 2.36 times the state average. Collision rates on Route 200 are 3.03 times the state average. Table 2 summarizes the actual fatalities and injuries and indicates the cause of the injuries within the same five-year timeframe.

Table 1
Collision Rate (Collisions/MVM*)

<i>Location</i>	<i>Actual</i>			<i>Average</i>		
	Fatal	F+I	Total**	Fatal	F+I	Total
US Route 101 (PM 89.77/90.13) (north and southbound)	0.000	0.51	1.42	0.008	0.22	0.60
Route 200 (PM 0.0/0.60) (east and westbound)	0.000	1.24	5.76	0.019	0.81	1.90

*million vehicle miles

**includes all collision types (fatal+injury+property damage only)

Table 2
Collisions (Actual)

<i>Location</i>	Total	Fatal	Injury	F+I	Multi-Veh	Wet	Dark
Route 101 (PM 89.77/90.13) (north and southbound)	28	0	10	10	15	10	12
Route 200 (PM 0.0/0.60) (east and westbound)	14	0	3	3	10	3	4

The data above shows a total of 42 collisions occurred within the project limits over the five-year time period. Approximately two-thirds of the collisions are attributable to vehicles weaving from one lane to another to access the Central Avenue on- and off-ramps. Approximately one-third of the collisions occurred in the Central Avenue off-ramp/Route 200 intersection area. These collisions resulted from unsafe driving practices using the off-ramp and westbound Route 200 traffic not yielding to US Route 101 traffic.

The following information discusses existing roadway conditions within the project limits:

1. Northbound Bridge and Central Avenue Off-ramp. The existing northbound bridge is approximately 225.5m (740-ft.) long and has two 3.35m (11-ft.) wide travel lanes and .3m (1-ft.) wide inside and outside shoulders. The Central Avenue off-ramp deceleration lane begins midway on the bridge structure with the off-ramp separation starting toward the northern end of the structure. Once the off-ramp is taken, it is approximately 183m (600 ft.) to the Route 200 intersection. Substandard travel lane and shoulder widths, a short deceleration lane beginning on the bridge and off-ramp starting on the bridge--with exiting traffic slowing—all make vehicle maneuvering difficult and may have contributed to collisions as shown in Table 2 above.

The 3.35m (11-ft.) wide lanes and 4.5m (15-ft.) high overhead steel truss limit the use of the bridge by wide-load vehicles and those exceeding the height limitation (Figure 2, Photo). Vehicles rerouted to avoid the bridge must take a four-mile detour from US Route 101 beginning south of the Mad River Bridge to Route 299, to Route 200 and then back onto US Route 101 at the Central Avenue/Route 200 intersection immediately north of the bridge structure. Maintenance reports indicate the truss structure has been impacted three times since 1993 by trucks. In addition, the existing .3m (1-ft.) wide shoulders do not adequately accommodate pedestrian or bicycle use. However, an existing flashing yellow beacon located immediately south of the bridge can be triggered by a pedestrian or bicyclist to alert vehicles they are on the structure.

2. Northbound Central Avenue Off-ramp and Intersection with Route 200. The US Route 101 northbound Central Avenue off-ramp to McKinleyville terminates at an at-grade intersection with Route 200. The Central Avenue off-ramp deceleration lane begins on the bridge structure with the off-ramp located immediately north of the bridge truss structure. Central Avenue and Route 200 are two-lane facilities with varying lane and shoulders widths from 3.35m to 3.6m (11 to 12-ft.) wide and .3 to 1.2m (1 to 4-ft.) wide respectively. The intersection is difficult to navigate because of poor sight distance and the generally high speed of northbound highway traffic exiting onto the off-ramp.

3. Southbound Central Avenue On-ramp/Southbound Bridge. The southbound Central Avenue on-ramp to US Route 101 has multiple curves and a short acceleration/merge lane onto the highway. The bridge was constructed with 3.6m (12-ft.) wide lanes, consistent with current design guidelines; however, the .6m (2-ft.) wide inside and outside shoulders do not meet current guidelines.

IV. PROJECT ALTERNATIVES

Project alternatives considered include Alternative 1, East Alignment, construction of bridges on a new alignment abutting and paralleling the east side of the existing bridges; Alternative 2, West Alignment, construction of bridges on a new alignment abutting and paralleling the west side of the existing bridges; and Alternative 3, a No Build Alternative. Under both Alternatives 1 and 2, the existing bridges will carry traffic during construction.

Alternative 2, West Alignment, is proposed as the preferred alternative because a western shift of the bridges will provide the area needed to improve the northbound Central Avenue off-ramp/Route 200 intersection.

Final selection of an alternative will be made after full evaluation of environmental impacts including considering comments from the public and agencies.

A. Alternative 2, Preferred Alternative. The proposed project consists of the replacement of the existing northbound and southbound Mad River bridge structures on US Route 101. Reconstruction of the northbound Central Avenue off-ramp and intersection with Route 200 and the southbound Central Avenue on-ramp to US Route 101 is also proposed. Route 200 is also named North Bank Road on US Route 101 signage. This document will use the more brief identification of Route 200 when referring to this project segment.

Construction of this alternative would be on a new alignment shifting the bridges west approximately 30.5m (100 ft.) from their existing location (Figure 3, Project Layout Plan). Construction on a new alignment will facilitate the use of the existing bridges during construction. Once traffic is moved onto the new bridges, the old bridges will be removed. Construction scheduling and discussion of traffic operations during construction is discussed in Section B below, Construction Overview.

The new bridges will be cast-in-place (CIP) concrete box girder bridges. Bridge lengths will be approximately 229m (750 ft.) long. The northbound bridge is proposed to be 15.38m (50.5 ft.) wide and the southbound bridge is proposed to be 12.76m (42 ft.) wide. Bridge widths vary due to on and off-ramp design and to accommodate the multi-purpose walkway. The bridges will be the same finished height.

Specific geometric improvements are included below:

1. Proposed Northbound Improvements. The proposed northbound bridge will be constructed with two 3.6m (12-ft.) wide lanes with a 1.5m (5-ft) inside and a 3m (10-ft.) wide outside shoulder. In addition, a 2.4m (8-ft.) wide pedestrian multi-use walkway separated from the US Route 101 traffic lanes is proposed on the east side of the bridge structure providing two-way access across the river (Figure 4, Bridge Cross Section). Pedestrian access on the bridge will connect with the existing walkway on Route 200 northeast of the bridge and to Wymore Road southeast of the bridge. Either the outside shoulder or the multi-use walkway can accommodate bicyclists.

The northbound Central Avenue off-ramp will be reconstructed in a new alignment consistent with the proposed new bridge alignment. The off-ramp deceleration lane will be increased approximately 33.5m (110 ft.) in length from 147m to 180m (482 ft. to 591 ft.). The additional length is proposed to provide greater sight distance for exiting vehicles approaching the Central Avenue/Route 200 intersection.

The Route 200 intersection with Central Avenue will also be reconstructed to improve sight visibility and provide a smoother transition to northbound US Route 101 and McKinleyville-

bound traffic from Route 200. The intersection will be geometrically redesigned at right angles and lighting and signage will be installed to improve visibility. The portions of Central Avenue and Route 200 within the project limits will be constructed with 3.6m (12-ft.) wide lanes and 2.4m (8-ft.) wide shoulders.

Table 3
Existing and Proposed Lane and Shoulder Widths

<i>Location</i>	<i>Existing</i>			<i>Proposed</i>			
	Lane Width	Inside Shoulder	Outside Shoulder	Lane Width	Inside Shoulder	Outside Shoulder	Multi-Use Walkway (2-way)
Northbound bridge	3.3m (11 ft.)	0.3m (1 ft.)	0.3m (1 ft.)	3.6m (12 ft.)	1.5m (5 ft.)	3.0m (10 ft.)	2.4m (8 ft.)
Southbound bridge	3.6m (12 ft.)	0.6m (2 ft.)	0.6m (2 ft.)	3.6m (12 ft.)	1.5m (5 ft.)	3.0m (10 ft.)	
US Route 200	3.3m (11 ft.)	0.3m-1.2m (1-4 ft.)	0.3m-1.2m (1-4 ft.)	3.6m (12 ft.)	2.4m (8 ft.)	2.4m (8 ft.)	

Table 4
**Existing and Proposed
Acceleration/Deceleration Lane Lengths**

<i>Acceleration/Deceleration Lanes</i>	<i>Type</i>	<i>Existing</i>	<i>Proposed</i>
Northbound Central Ave. off-ramp	Deceleration	147m (482 ft.)	180m (591 ft.)
Southbound Central Ave. on-ramp	Acceleration	188m (616 ft.)	432m (1,417 ft.)
Route 200/NB Central Ave	Acceleration	68m (223 ft.)	97m (318 ft.)

2. Proposed Southbound Improvements. The proposed southbound bridge will be constructed with two 3.6m (12-ft.) wide travel lanes, a 1.5m (5-ft.) wide inside and 3m (10-ft.) wide outside shoulder. The outside shoulder will also accommodate bicyclists. The southbound Central Avenue on-ramp will be reconstructed on a new alignment consistent with the proposed realignment for the main structures. The on-ramp acceleration/merge lane will be increased 244m (800 ft.) to provide improved sight visibility and to facilitate safer merges onto US Route 101.

3. Utilities. Utilities are located within easements in the transportation right of way and will require relocation. It is anticipated that utilities will be relocated onto the new bridges. Utilities include a PG&E 8-inch diameter natural gas pipeline that currently is attached to the west side of the southbound bridge, PG&E 12.5 kv overhead electrical lines

that transverses the bridges, Pacific Bell overhead copper and fiber optics cables and Cox Cable TV overhead cables running jointly with the Pacific Telephone cables on the east side of the northbound bridge. All utility route verifications and proposed relocations of lines will be made pursuant to the Caltrans' North Region Utility Verification and Relocation Policies and Procedures (June 7, 2003) memorandum regarding public utilities on State highway projects.

4. Culvert Rehabilitation. Seven existing culverts are proposed for rehabilitation within the project limits. Three are located under the roadway prism on US Route 101 and four are located on Route 200 (Figure 6, Culvert Location Map). Proposed work includes removing and/or replacing existing structures at the inlet or outlet, i.e., steel flared end sections, headwalls, endwalls and repair or replacement of rock energy dissipation (RED) systems. The purpose of the rehabilitation is to insure the culverts adequately carry surface water runoff beneath the realigned roadways. If the culverts are not rehabilitated, normal drainage flows would lead to soil erosion and could ultimately jeopardize the stability of the roadway prism by causing slipouts and/or result in flows crossing the roadway. The Hydraulics Report prepared for the project recommends the following work be performed:

- ◆ Location 1, Route 200, KP 0.49 (PM 0.31). Place RED at outlet;
- ◆ Location 2, Route 200, KP 0.69 (PM 0.43). Extend the existing 600mm (24-in.) diameter culvert 13m (43 ft.) at the outlet;
- ◆ Location 3, Route 200, KP 0.67 (PM 0.42). Extend the existing 600mm (24-in.) diameter culvert 13m (43 ft.) at the outlet;
- ◆ Location 4, Route 200, KP 0.80 (PM 0.50). Place a new 600mm (24-in.) diameter, 34m (110-ft.) long culvert. The new culvert will drain into the same channel as the existing culvert. A rock-lined ditch between the existing drainage inlet location and the new one will be constructed to improve drainage. The existing 600mm (24-in.) culvert will be plugged and abandoned.
- ◆ Location 5, US Route 101, KP 144.63 (PM 89.87). Remove and replace the existing headwall and endwall and extend the existing 900mm (36-in.) diameter culvert an additional 38m (125 ft.) at the inlet and 4m (13 ft.) at the outlet.
- ◆ Location 6, US Route 101, KP 144.76 (PM 89.95). Place a new 450mm (18-in.) diameter 44m (144-ft.) long culvert with flared end section at the inlet and outlet. The existing culvert will be plugged and abandoned; and
- ◆ Location 7, US Route 101, KP 145 (PM 90.10). Extend the existing 450mm (18-in.) diameter culvert 2m (6.5 ft.) at the inlet.

All applicable soil erosion and water quality Best Management Practices (BMP's) will be implemented during culvert rehabilitation work. RED placed will be the minimum necessary to control erosion at the culvert outlets.

In summary, the safety features and improvements proposed for the Mad River bridges include:

- ◆ More scour-resistant bridges;

- ◆ Bridges designed and constructed to meet current seismic design guidelines to withstand maximum credible seismic events for the location;
- ◆ Adequate lane and shoulder widths providing safer vehicle movements for all vehicle types;
- ◆ Direct and continued access on US Route 101 for high/wide-load vehicles eliminating a four mile detour;
- ◆ Reconstruction of on- and off-ramps increasing acceleration/deceleration lane lengths to improve sight visibility, improve traffic safety and reduce collisions;
- ◆ Reconstruction of the northbound Central Avenue intersection with Route 200 and install lighting and signage to improve sight visibility and reduce collisions;
- ◆ Three meter-wide (10-ft.) outside shoulders on both bridges to accommodate bicycle access; and
- ◆ A 2.4m (8-ft.) wide multi-use walkway on the east side of the northbound bridge to provide two-way non-motorized access over the bridge.

B. Construction Overview. The proposed project is estimated to take four seasons to complete and is scheduled to commence in year 2007 with completion in year 2010 (see Construction Schedule below). Work within the river channel may only occur within a four-month period from June 16 through October 14 when the federally-listed Chinook salmon and steelhead trout and state and federally-listed Coho salmon are least likely to be present. Work within the river channel includes the construction of cofferdams, falsework, bridge piers, footings, and placement of rock slope protection. The river would be diverted to carry out construction and the proposed methodology is discussed in the Standard Impoundment and Dewatering Methodology section below. All other project construction work outside of the river channel may occur throughout the year with no seasonal restriction.

1. Staging Areas/Access Roads. Staging areas on both sides of the river would be used by the contractor to store construction equipment, materials and to access the construction site. The north staging area is 0.68ha (0.17 acre) and the south staging area is 0.9ha (0.22 acre). The edge of the staging areas will be at least 15m (50 ft.) from the channel in order to minimize impacts to the riparian corridor (see Figure 3, Sheet 1, Layout Plan).

The proposed staging area on the south side of the river can be accessed from Wymore Road on the east side of the existing US Route 101 alignment. An unpaved access road from Wymore Road to the staging area already exists that is used by a private residence on the southwest side of the project. This residence is located within the new proposed right of way and would require relocation or removal. Caltrans currently owns this access road and has granted an easement to the property owner for use to enter the property. Both the current northbound and southbound bridges span the existing access road. This road would be widened to allow for the passage of large trucks and equipment.

The staging area on the north side of the river can be accessed from Route 200 and was used in a previous Caltrans project that installed rock slope protection to the northeast quadrant of the bridge for scour protection. The access would require a temporary construction easement from the current property owner and would cut through the property towards the river,

turning west to access the proposed staging area. Both the northbound and southbound bridges would span this unpaved access road.

All applicable temporary construction BMP's for staging areas and site access will be implemented in accordance with the Caltrans Storm Water Quality Handbooks. Those BMP's may include but are not limited to: silt fences, fiber rolls, straw bales, sandbag barriers, check dams, and sediment basins.

2. Surveys/Test Borings. Accurate foundation information for the proposed bridge locations is required prior to completing bridge design. To obtain the information necessary, a structure foundation study, which includes rock/soil material testing, is required.

The proposed tests include drilling a 94mm (3.7-in.) diameter hole, approximately 45m (150-ft.) deep, at each of the four proposed pier locations as well as the two abutment locations, resulting in a total of six drilling locations. Survey borings will require accessing the channel by way of the north bank and south bank access road locations and would be drilled west of the existing bridges, near the location of the new proposed bridges. A 94mm (3.7-in.) core of rock would be removed from the bore and the bore will be back-filled with lean concrete to plug it. The minimum amount of vegetation would be cut or disturbed during this process.

3. Standard Impoundment/De-Watering Methodology. Diversion of the Mad River at the construction site would be required to remove existing piers, construct new piers and place falsework. A temporary dike constructed of water bladders, clean, washed, spawning-size gravel and/or other methods that will not result in notable degraded water quality are proposed for use to divert the flow and maintain dry conditions around the work area. After all water is diverted to avoid entrapping fish, sheet pile cofferdams would be placed into the dry work area. Subsurface flow may percolate into the cofferdam requiring that water be pumped out to maintain dry conditions. Since there will not be any direct connection between the river and cofferdam and the area will be above the low-flow water when the cofferdam is placed, there is no possibility of entrapping fish within the excavation and no need to screen the pump intake to protect fish.

Pumping within the excavations at the various pier footings will be required to maintain a de-watered work area. The effluent will be pumped into a settling basin, constructed either by digging a hole or building a berm around the basin area using native materials. The settling basin will be located on either the gravel bar above the work area, or outside the river channel. After construction, any residual silt or fine materials within the settling basin will be removed to a disposal site above high water. If the settling basin is within the channel, the gravel will be graded to preclude future impoundment of fish.

4. Construction Schedule.

Year One. In the first year of construction, earth fill for the north and south bridge abutment approaches would be placed to raise the new roadway surface elevation to the new bridge elevation. Excavation for the new abutments (beginning and end supports for the bridge) then follows. This work will occur above the high water elevation.

After the approach fill and abutment excavation is completed, the new southbound bridge would be constructed first and it is anticipated to take two years to complete. During the first year, pile driving for abutment footings and construction of the abutments, construction of cofferdams and the bridge pier footing in the channel, and the construction of two pier footings upland would occur.

Cofferdams would be placed according to the standard methodology for de-watering, as previously described above, prior to work at the piers that are below ordinary high water. Bridge pilings would be driven into the ground by use of a diesel hydraulic hammer or drill rig. A lined concrete truck washout location will be provided onsite, outside of the channel, pursuant to BMP's in accordance with all applicable permits.

In anticipation of agency permit conditions, it is proposed that all equipment and construction materials will be removed from the channel by October 15th of each year.

Year Two. Year Two construction will focus on the southbound bridge superstructure and the realignment of the southbound Central Avenue on-ramp. Falsework would be used. The falsework is a temporary, wooden bridge that would span the wet channel, and is used to form the bridge and hold its superstructure loads during construction. Once the falsework is placed, construction of the new bridges can begin. The falsework would then be removed and any altered gravel bars for construction purposes will be graded to conform to natural gravel bar contours to prevent fish impoundment. Any earthwork that may not have been completed for the bridge approach would be completed at this time and the asphalt concrete pavement for the new bridge would be laid and compacted. Finally, guardrails would be installed and traffic striping would be completed.

The realignment of the southbound Central Avenue on-ramp would be constructed to connect to the existing Silva Road junction located on the northwest side of the river. The general sequence of construction involves traffic control, clearing and grubbing, performing cut and fill, extending culverts and ditches, grade formation, placing base material and asphalt concrete, relocate telephone and water lines, putting up lighting and signal system and installing traffic stripes and pavement markings. Transition to the existing alignment from the new alignment would result in diversion of traffic and temporary shutdown of the southbound bridge.

Year Three. The third year of construction would involve removal of the existing southbound bridge and beginning construction of the new northbound bridge that is proposed to be completed in Year Four. Construction activities for the northbound bridge are consistent with methodologies for construction of the southbound bridge.

Bridge removal for the existing southbound bridge would be performed by placing a debris platform beneath the existing bridge and then removing the superstructure. Explosives will not be used to dismantle the existing bridge and no portion of the bridge will drop into the live channel. The concrete deck surface, girders and remaining superstructure would be

removed in sections. All containment for concrete debris and paint removal will be in place before any removal activities occur.

Due to possible future scour concerns, and since the existing concrete footings are fairly shallow, it is proposed to completely remove the existing concrete footing, excluding the piles.

Transition from the existing alignment would result in temporary overnight shutdowns of US Route 101 with detours in place. A Traffic Management Plan (TMP) will address traffic handling operations during construction and a public awareness program will be in place.

Year Four. Any superstructure work remaining for the new northbound bridge would be completed as well as the asphalt concrete paving, guardrail installation and traffic striping. The traffic would be moved over to the new bridge and removal of the existing northbound bridge would be performed. The removal of the existing northbound bridge would be accomplished the same way as the southbound bridge. Once the northbound bridge is removed, the water-diverted area of the channel will be graded to conform to the natural gravel bar structure in order to prevent fish impoundment. Lastly, staging areas and access roads will be removed and revegetation and replanting will occur.

C. Other Alternatives Considered.

1. Alternative 1, East Alternative. Alternative 1 proposes to construct the project on an alignment abutting and paralleling the existing eastern alignment of the bridges. The bridge design would be virtually the same as that described for Alternative 2, the proposed preferred alternative. The project cost is estimated to be approximately \$26 million, the same as the proposed preferred alternative. The Central Avenue on- and off-ramps as well as the Route 200 intersection would also be reconstructed; however, less area would be available to improve geometrics at Route 200 because of existing topography. Construction methodology would be similar to that described for the proposed preferred alternative and would have similar impacts on resources except as noted below.

Construction of the East Alternative is less desirable than the West Alternative for the following reasons:

- ◆ Approximately one-tenth acre of additional right of way of agricultural land would be required;
- ◆ Less area would be available to reconstruct the Central Ave./Route 200 intersection geometric improvements resulting in less desirable geometric improvements;
- ◆ Traffic delays would be increased during construction at the Central Avenue off-ramp due to the inflexibility of working within existing site constrictions; and
- ◆ Noise levels for residents would be increased both temporarily and permanently because the bridges would be closer to homes.

A potential benefit resulting from an eastern alignment is that the existing residence located on the southwest bank of the river might not require relocation or removal. Project impacts

to this residence are discussed in the Housing/Population section of the Environmental Evaluation, Chapter V.

2. Alternative 3, No Build. The No Build Alternative would result in continued deterioration of the bridge structures. Scouring would continue to undermine and expose bridge foundations contributing to unstable bridge conditions with possible collapsing of the structures. A No Build Alternative would not improve operational conditions for existing or projected future traffic and, most likely, the collision rate would continue to be in excess of statewide-expected rates for similar facilities.

3. Alternatives Considered But Rejected

- ◆ An alternative to build a temporary structure to carry traffic during construction to allow replacement of the bridges on the existing alignment was considered but rejected due to the costs of constructing four bridges. Existing traffic volumes dictate four lanes are necessary to handle peak traffic for this segment of highway. In addition, any structure, whether temporary or not, must still be constructed to meet all design criteria for public safety purposes. As the current project cost is approximately \$26 million, it can be anticipated the construction of additional structure(s) to handle existing traffic volumes would increase the total project costs beyond feasibility. The expenditure of funds to construct structures that would be removed four to five years later also was a significant consideration.

Many considerations in addition to costs were considered in evaluating this alternative. In addition to the impacts discussed above, construction of temporary bridges would result in greater impacts to the natural and human environment. Impacts to river hydrology, biology, water quality, and agricultural resources would be at least twice greater than the proposed project with the construction and removal of temporary structures.

- ◆ Rerouting traffic onto one bridge to accommodate replacement on existing alignment was considered but rejected because one open lane in each direction would not accommodate peak traffic loads and would result in unacceptable traffic queues on the highway. Construction of the Central Avenue/Route 200 intersection would also exacerbate delays in the northbound movement. Rerouting would be required during the four-year construction schedule.
- ◆ An alternative to leave one of the existing bridges in place after construction to be used for pedestrian/equestrian/bicycle use was considered but rejected due to the high costs associated with upgrading the bridges for scour and seismic purposes. The bridge would require these improvements regardless of whether it carried motorized traffic or not. In response to local concerns regarding public access over the bridges, the proposed project is designed to accommodate both bicycle and multi-purpose accessway.
- ◆ Signalization of the northbound Central Avenue off-ramp intersection with Route 200 was considered to address the high collision rate. Signalization would most likely require

increasing the length of the off-ramp deceleration lane and other off-ramp modifications to accommodate traffic at a cost of between \$3 - \$6 million. Signalization could result in vehicles being backed up onto the main highway and would require extensive redesign of the northbound bridge segment resulting in project delays. Headquarters Project Development Coordinator and District 1 Deputy District Director, Program Project Management, have concurred the intersection will be monitored and, if necessary, take corrective action that could result in the initiation of a separate project (May 8, 2003 Issue Paper).

V. AFFECTED ENVIRONMENT/ENVIRONMENTAL EVALUATION

This chapter describes the existing environmental setting in relation to the Mad River Bridges that may be directly, indirectly, or cumulatively affected by the proposed project. Included in this chapter are a listing and a description of important resources and characteristics found within the project area.

This chapter also includes a narrative discussion of potential impacts and mitigation measures to reduce impacts to less than significant levels. A multi-disciplinary procedure was used to identify, assess, and document the effects of Alternative 1, East Alternative, the No-Build Alternative, and the preferred proposed bridge replacement project (Alternative 2, West Alternative) on the physical, biological and socio-economic environments. This chapter also discusses measures to avoid, offset, or minimize project effects. These measures are also included in Chapter VI, Environmental Commitments and Mitigation.

The following evaluation addresses the proposed preferred Alternative 2, West Alternative. Impacts resulting from construction of Alternative 1, East Alignment, would be the same except where directly noted and as discussed in Chapter IV, Section C-1, Alternative 1, East Alignment.

Except where stated, the No-Build Alternative would not result in any environmental impacts. As with the proposed project, only the proposed “action” of the No-Build Alternative is evaluated for potential environmental effects. For the purposes of this environmental document, the No-Build Alternative would primarily involve periodic bridge inspections, routine repair and maintenance work and continuing efforts to offset scour with the potential for eventual load restrictions and possibly bridge closure. In a seismic event, the undermined and scoured pier footings could lead to bridge failure.

The following evaluation discusses the physical, biological, social and economic factors that might be affected by the proposed project based upon the CEQA Environmental Significance Checklist. The checklist follows this discussion. Background studies performed in conjunction with the project support the findings discussed below. A “No Impact” answer in the last column of the checklist reflects this determination and will not be further discussed. The words “significant” and “significance” used throughout the following evaluation and checklist are related to CEQA impacts.

On construction projects, Caltrans must follow a number of procedures and practices as well as adhere to regulations that reduce the impact of a construction project on the environment. These practices, procedures, and anticipated permit requirements are collectively called design features in this document. Within this chapter, there are brief descriptions of the design features that will be incorporated into the proposed project by resource area. Further details about BMP's can be found in some of the studies and documents listed below:

- ◆ Biological Assessment for FESA Section 7 Consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries for listed fish species
- ◆ Cultural Resources Study
- ◆ Floodplain and Hydraulic Recommendation Report
- ◆ Geology and Soils Report
- ◆ Historic Architectural Survey Report
- ◆ Initial Site Assessment/Hazardous Waste Report
- ◆ Noise Report
- ◆ Right of Way/Utilities Preliminary Report
- ◆ Visual Assessment and Scenic Resource Report

These reports are available for public review at the Caltrans District 1 Office, Environmental Management Branch, 1656 Union Street, CA 95501. To set up an appointment, call Deborah Harmon at (707) 445-6416.

Environmental Evaluation

A. AESTHETICS

Setting. The Visual Assessment Report (VAR) identifies the Mad River as a scenic resource; however, the river is not included in either federal or state designated wild and scenic rivers systems. US Route 101 and Route 200 are not designated as scenic highways within the project vicinity. The northbound bridge was constructed in 1929 and the southbound bridge in 1958 and, consequently, were designed for their respective time periods and are dissimilar in appearance. Major visual differences between the companion bridges consist of the overhead truss structure on the northbound bridge, varying guardrail design, and a five-foot height variation on the southbound over the northbound bridge. The overhead truss structure obstructs views to the east and southeast when traveling on the southbound bridge and in all directions when travelling on the northbound bridge. The five-foot height increase of the southbound bridge over the northbound bridge substantially obstructs the western view of the river when travelling north. The varying guardrails also add to the visual complexity of the bridges.

Design Features and Project Effects.

◆ **Bridge Design.** The proposed bridge design will improve views to the river and to surrounding lands and will provide a visual consistency between the bridges. The bridges are of mirror-image design and will eliminate the visual complexity resulting from bridge height differences, the overhead truss, and varying guardrails. Design, color, materials used, and

guardrail will be consistent on both bridges. Bridge decks will be the same height to improve sight visibility to northbound travelers. The northbound bridge structure supports an outer, separated eight-foot wide multi-purpose walkway to non-motorists, along with a 10-ft. wide outside shoulder that may be used for a bicycle lane. These two design features provide a new opportunity for non-motorized users to enjoy river views eastward.

◆ Bridge Railing. Bridge railing on the northbound bridge has been designed to maximize views upriver (east) for both motorized and non-motorized users (Figure 7, East View). Three types of transportation users will use this bridge: motorists in the travel lanes, bicyclists in the 10-ft. wide shoulder and pedestrians/other non-motorized users, including bicyclists, in the outer eight-foot wide multi-purpose walkway. A Type 25 concrete barrier is proposed on the west edge of the inside shoulder. Since this barrier is “inside” adjacent to the southbound bridge, it does not obstruct any views of the river. A Type 27 concrete barrier with safety bicycle tubular railing is proposed to separate the roadway lanes and shoulder from the pedestrian multi-purpose walkway. Lastly, a six-ft. high pedestrian safety “picket-style” fence is proposed for the outer (eastern-most) edge of the multi-purpose walkway. This fencing will be constructed with a non-corrosive metal and can be painted bluish-green to blend in with the surrounding landscape. Due to this additional fencing, motorist views eastward may be slightly impacted.

Bridge railing on the west side of the southbound structure consists of a Type 80 concrete “see-through” barrier with a safety tubular bicycle rail on top of it (Figure 7, West View). A Type 25 solid concrete barrier is proposed for the inside guardrail similar to that inside barrier proposed for the northbound bridge.

◆ Lighting and Signage at the Central Avenue/Route 200 Intersection. The northbound Central Avenue off-ramp and off-ramp intersection with Route 200 is located northeast of the river. Proposed reconstruction of this off-ramp and intersection improvement does not raise any aesthetic issues as the area is paved with only existing ruderal vegetation. Lighting and signage will be installed at the intersection to improve visibility and safety. This lighting will have no impact to scenic resources since the intersection is northeast of the river and the lighting will be directed to the pavement. The sign will be an arterial street sign.

◆ Replanting and Revegetation. Construction of the bridges on the new alignment, including the realignment of the southbound Central Avenue on-ramp, will impact existing trees and vegetation on the banks of the river and adjacent to the existing on-ramp location. A total of fourteen mature Monterey pine trees (80-100 ft. high) stand adjacent to the southbound Central Avenue on-ramp requiring removal to accommodate the realignment. In addition, realignment of the bridges will also require the removal of trees and understory vegetation along the west side of the southbound bridge on both the north and south banks. This area totals approximately .24ha (.61-acre). The design plans would incorporate the VAR recommendation to replace the 14 Monterey pine trees requiring removal adjacent to the southbound Central Avenue on-ramp. The trees would be replaced with a native species that will mature to the same mass as the existing pines. Replanting will minimize long-term visual impacts resulting from the loss of the trees.

The VAR states that there will be no significant visual impacts resulting from the removal of the riparian trees and understory vegetation along the western side of the existing southbound bridge on the north and south banks. This conclusion is based upon the presence of dense vegetation that exists all along both banks of the river and that only the minimum amount of vegetation necessary to accommodate the bridge footprint will be removed. The area affected by the bridge realignment totals approximately .24ha (.61 acre). After removal of the existing bridges, approximately .13ha (.32-acre) will be available for replanting and revegetation for a total net loss of .11ha (.29-acre) of vegetation at the project site. Standard Specifications requiring replanting and revegetation of the affected areas will be included in the construction contract. Other mitigation to offset the loss of the .11ha (.29-acre) of riverbank vegetation may be required by permitting agencies and is more fully discussed in the Biology section below in this chapter.

B. AGRICULTURE AND LAND USE

Agriculture and Land Use are discussed together since the bridges are situated over lands used in agricultural production as pasturelands. This section also discusses project consistency with federal and state laws protecting farmlands and Local Coastal Plan policies.

The criteria for determining the significance of this resource is whether the strip takings of four privately-held parcels in agricultural use would adversely impact that use so as to directly, indirectly, or cumulatively cause its conversion to non-agricultural uses, resulting in the general decline of agricultural resources in the county. The County has policies in place emphasizing preservation of agricultural lands and has adopted a resolution that there should be no net loss of agricultural revenue for farmers.

Setting. US Census of Agriculture (1997) information indicates approximately 263,047ha (650,000 acres), or more than 25 percent of the total acreage in Humboldt County, was in agricultural use (excluding timber) in 1982. The county has experienced the loss of 1,214ha to 2,023ha (3,000 to 5,000 acres) of farmlands annually since 1964 due to conversion to non-agricultural uses.

Dairy farming and milk production is the largest industry in Humboldt County, with nursery, livestock, and field crop production following. Humboldt County dairies produce about one percent of the state's total supply of milk. California is ranked number 1 for milk production in the United States.

The soils within the project limits include Prime agricultural soils, as identified in the Soils of Western Humboldt County, California, November 1965. Soils in the project vicinity are mapped as Ferndale 2 with and a very small portion mapped as Ferndale 13. The Ferndale series are generally characterized as having medium texture, well-draining soils of recent alluvial origin. The Ferndale 2 soils have a high nutrient capacity and a favorable moisture holding capacity. The soils are rated 100 in the Storie Index, which is categorized as prime agricultural soils. The Ferndale 13 soils are located along the banks of the river and are of mixed textural composition. Most of these areas are subject to frequent annual flooding and the soil material ranges from deep to shallow, and normally hummocky or channeled. This

soil type is separate from riverwash because of the agricultural potential where flooding can be controlled. The Storie Index rates this soil as Variable.

Agricultural Regulatory Setting.

At the federal level, the provisions of the US Farmland Protection Policy Act of 1984 (FPPA) require agencies to address the effects of projects on farmlands and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) oversees implementation of the FPPA. It requires that an inventory of farmlands be prepared which identifies prime, unique, and other farmland of statewide or local importance that would be affected by the project. The NRCS system of classification generally provides an indication of how suitable the soils are for agricultural use. For each alternative, a Farmland Conversion Impact Rating Form must be completed in consultation with the NRCS staff. These forms provide the basis for assessing project impacts on farmland relative to federally established criteria. The NRCS is in the process of doing comprehensive mapping and soils classification for Humboldt County, among other areas. Since the local mapping is incomplete in Humboldt County, coordination with the NRCS staff is very limited and the information is not available to fill out the Conversion Impact Rating Form. Because the NRCS soil data is not available, another source of soil data was used for the analysis of this project. The soils within the project limits include prime agricultural soils, as identified in the only published soils classifying system to date, the Soils of Western Humboldt County, California, a cooperative project between the Department of Soils and Plant Nutrition, U.C. Davis, and the County of Humboldt, California.

At the state level, the California Land Conservation Act (also known as the Williamson Act) of 1965 was enacted to minimize the conversion of farmlands to urban uses. This act allows local governments to designate farmlands as agricultural preserves. None of the affected parcels proposed for new right of way are currently under contract pursuant to the Williamson Act.

Land Use Setting/Local Coastal Plan. Land uses adjacent to the project site are agricultural and residential. River uses are recreational and commercial. Primary recreational use includes fishing and boating. Commercial use near the project site involves gravel-mining operations upriver, just south of the City of Blue Lake. Six partial acquisition parcels are required for the proposed new right of way. Four parcels are zoned agricultural, the fifth is zoned partially agricultural and natural resources and the sixth is zoned natural resources. The natural resource zoning applies to those parcels because they are submerged lands in the Mad River. Although the fifth parcel is partially zoned agricultural, current mapping indicates the Mad River covers it.

The proposed project is located within the coastal zone and is subject to the Local Coastal Plan (LCP) adopted as part of the Humboldt County General Plan. The LCP identifies land use issues and guidelines by which development will be evaluated within the coastal zone.

The new bridges will span the Mad River and a riparian corridor along the north and south banks of the river. The LCP Natural Resources Protection Policies and Standards provide

that environmentally sensitive habitat areas, including riparian corridors, shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. The policy also states that development in areas adjacent to environmentally-sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

Design Features and Project Effects. Bridge realignment requires new right of way over four parcels in agricultural use and two parcels that are covered by the Mad River. Table 5 below shows the four affected agricultural parcels (two separate parcels are under one ownership and are identified as Parcels 2a (west) and 2b (east)), total parcel size, the area of right of way needed, and county zoning. The project will affect approximately 3.3 percent of the 50.5ha (125 acres) of agricultural lands immediately adjacent to the project site. The percentage of loss on a countywide basis is infinitesimal.

The proposed new right of way will consist of a linear strip of land less than 804m (2,640 ft.) by approximately 38m (125 ft.) wide, running parallel with the existing western right of way. This area totals approximately 1.09 ha (2.7 acres). Six partial acquisition-parcels are required for the proposed right of way. Partial acquisition of the four agricultural parcels are referred to as “strip takings” through fenced pastureland and are shown in Table 5 below. These pasturelands would be affected with the actual realignment. Although the US Route 101/Route 200 intersection may be further improved in the future (see Project Alternatives discussion on page 13) the proposed project is the minor realignment of an existing four-lane highway and does not include any future expansion of uses that could result in further conversion of farmland to non-agricultural uses.

**Table 5
Affected Agricultural Lands**

Parcel	Total Parcel Size	Proposed R/W Acquisition	Zoning*
Parcel 1	22ha (55 ac.)	0.36ha (0.9 ac.)	Ag/Ex/60-ac min**
Parcel 2a (west) & Parcel 2b (east)	12ha (30 ac.) (combined acreage of both parcels)	0.68ha (1.7 ac.) 0.008 ha (0.02 ac.)	Pr/Ag/Ex/60-ac min*** Pr/Ag/Ex/60-ac min
Parcel 3	16ha (40 ac.)	0.02ha (0.05 ac.)	Pr/Ag/Ex/60-ac min
Total	50.5ha (125 ac.)	1.08ha (2.67 ac.)	

*Humboldt County Zone Phone Automated Information

**Agriculture/Exclusive/60-acre minimum parcel size

***Prime/Agriculture/Exclusive/60-acre-minimum parcel size

Realignment of the bridges west may result in excess right of way on the east side of the bridges that is used as the existing right of way. This area totals approximately 0.64ha (1.6 acres) in size. The same property owners are affected by right of way takes for both Alternative 1 and Alternative 2. If this portion of right of way returns to private ownership, it may be possible to return the lands to agricultural use after project completion. In this case,

the net loss of agricultural lands would be reduced to 0.44ha (1.1 acre) instead of 1.09ha (2.7 acres). The 0.44ha (1.1-acre) loss of agricultural lands represents 1.37 percent of the total 50.5ha (125 acres) of agricultural lands adjacent to the bridges. To further mitigate for the loss of agricultural lands to a less than significant level, the contribution of funds to a land trust approximately equal to the market value of agricultural lands displaced may be made. These funds can be made available to assist in the preservation of agricultural lands. No other mitigation is proposed.

One existing single-family residence, currently used as rental housing, is located within the project limits and is situated on the southwest bank of the river. This residence would be proposed to be removed or relocated to accommodate the realignment. Six other residences are located near the project site; however, none of these homes are within the new proposed right of way and will not require relocation.

Construction of Alternative 1, the eastern realignment, would require one-tenth additional acre of agricultural land over the preferred western realignment. This alternative presents a negligible increase of impacts to agricultural lands over the preferred west alternative. If Alternative 1 were constructed, additional mitigation to offset the one-tenth acre would be provided. In addition, Alternative 1 would not require the removal/relocation of the single-family residence located on the southwest bank of the river.

Project design features that address LCP resource protection policies are discussed in the Aesthetics and Biology/Water Quality sections within this chapter. Since the project is a realignment of the existing highway and spans the river at a right angle, the existing bridges are sited to have the least impact to the riparian corridor. The Aesthetics section more fully discusses project siting and design features to minimize impacts to riparian corridor resources. The Biology/Water Quality section discusses design features to minimize project impacts to environmentally-sensitive habitat areas. Chapter VI, Environmental Commitments/Mitigation discusses project features that reduce project impacts to these resources to less than significant levels.

C. AIR QUALITY

Setting. The Federal Clean Air Act includes National Air Quality Standards for six air pollutants, which must not be exceeded more than once per year. In California, the California Air Resources Board and the regional Air Quality Management Districts (AQMD) and Air Pollution Control Districts implement both Federal and State air quality regulations. The Mad River Bridges are located within the North Coastal Unified Air Quality Management District, which includes Del Norte, Humboldt, Trinity, Mendocino and northern Sonoma Counties. This AQMD is in attainment for all Federal and State pollutants except airborne particulate matter.

Design Features and Project Effects. Temporary impacts from dust during construction are regulated in accordance with Section 7-1.01P (Air Pollution Control) and Section 10.1 (Dust Control) of the current Caltrans' Standard Specifications. These provisions require the contractor to comply with all Unified Air Pollution Control District and other local

jurisdictions' rules, regulations, ordinances and statutes. Since the applicable State and National Air Quality Standards would not be exceeded under worst case conditions, there would be no substantial adverse air quality impacts from the proposed project and no mitigation measures are proposed.

D. BIOLOGY/WATER QUALITY

Environmental Setting. The Mad River originates in Trinity County and flows through Humboldt County into the Pacific Ocean. The bridges cross the river two miles inland from the ocean. The river and its reaches are a migratory and spawning corridor for three anadromous fish species (fish whose life cycles include both fresh and salt water) listed as threatened under the Federal Endangered Species Act (FESA) by the NOAA Fisheries: Coho salmon, Chinook salmon and steelhead trout.

The banks of the river support alders and juvenile willow trees as well as other riparian vegetation consisting of Water Birch, Coyote brush, Himalayan blackberry, sedge, horsetail, Plantago, yarrow, sword fern, hemlock, fennel, Salal, velvet grasses and ruderal grasses.

Sensitive habitats and/or species within the project limits include:

- ◆ **Wetlands.** The wetlands within the project area are located at the culvert inlet and outlet structures and immediate vicinities. Less than 9.3 sq.m (100 sq. ft.) of wetland consisting of cattails will be filled.
- ◆ **Federally-Listed Species.** In addition to the three anadromous salmonids, the proposed project is also within the range of three additional listed species including marbled murrelet, western snowy plover, and northern spotted owl. However, no suitable habitat for these species is present within the project limits.
- ◆ **State-Listed Species.** The Coho salmon is listed as a threatened species pursuant to the California Endangered Species Act (CESA).
- ◆ **Wildlife Species of Concern.** The California Department of Fish and Game includes the potential for the following special status species at the project site: coastal cutthroat trout, southern torrent salamander, northern red-legged frog, foothill yellow-legged frog, and northwestern pond turtle. No known occurrence of these species with the exception of cutthroat trout are within the project limits.
- ◆ **Plant Species of Concern.** There are no known state and/or federally-listed rare, threatened or endangered plants occurring in the vicinity of the project.

Project Features/Project Impacts. As discussed in the project description, there are numerous construction methods and features proposed that would minimize potential impacts to listed fish and would minimize potential for degradation or impacts to water quality.

Riparian Impacts. Realignment of the bridges to the west will require the removal of .11ha (.28 acre) of riparian vegetation on the southwest bank and .13ha (.33 acre) on the northwest bank for a total of .24ha (.61 acre). To minimize removal of riparian vegetation other than that required for the bridge construction, construction staging areas on both the north and south banks are located 15m (50 ft.) back from the edge of the bank outside the riparian

corridor. In addition, both proposed construction access roads are located outside the riparian corridor. Excluding the tree removal needed to construct the new bridges, the overhanging canopy of riparian vegetation along the river will not be disturbed and shade on the water from riparian plants will not be permanently altered. To minimize the loss of riparian vegetation, an area about .05ha (.14 acre) would be available for revegetation on the northeast and southeast sides of the bridge after its removal. No other mitigation is proposed.

Water Quality Impacts. Temporary direct impacts resulting from construction of the project will require partial diversion of the Mad River over four consecutive construction seasons.

The effluent from dewatering will be pumped into a settling basin, constructed either by digging a hole or building a berm around the basin area using native materials. The settling basin will be located on either the gravel bar above the work area, or outside the river channel. After construction, any residual silt or fine materials within the settling basin will be removed to a disposal site above high water. If the settling basin is within the channel, the gravel will be graded to preclude future impoundment of fish. Water pumped from the work site shall receive appropriate treatment, as required by the Regional Water Quality Control Board, prior to being discharged onto the ground or into the river.

Pile and sheet pile driving vibration impacts and various grading and pumping activities will also temporarily affect the project site. During diversion and pumping, temporary decreases in water quality and alteration of habitat may result from riverbed disturbance and diversion. Filling pools or riffles with gravel, silt discharges smothering benthic organisms, or flooding of previously dry reaches of stream which do not have a developed aquatic food chain or suitable habitat structure would have a short term adverse effect on resident salmonids. Permanent direct impacts are a net increase in river area of approximately 53.8 sq.m (580 sq. ft.) due to a decrease in the size and number of proposed piers over those of the existing piers. Footing extensions are below the riverbed level and do not result in permanent impacts to the available salmonid habitat.

Salmonid Impacts. The bridge structure and footings within the river currently provide a shaded pool-riffle habitat. Construction activity, including diversions and dewatering will alter the pool-riffle habitat present and continuous construction activity will cause some of the resident fish to leave this portion of the river. Movement of salmonid juveniles into other habitats may cause additional competition with other resident fish for food and habitat and result in additional exposure to predation. Coho adult salmon are not expected to be present during the proposed in-water construction season beginning June 16 and ending on October 14. Coho smolts are likely to have migrated through the project area before any in-water construction but Coho fry may rear in the action area during the in-water construction season. Chinook adult salmon are not expected to be present during the proposed in-water construction season but Chinook juveniles may be present in June during the final stage of their rearing and out-migration period. Steelhead trout adults may be present in the project area at the very end of the in-water construction season and juvenile steelhead is expected in the project area during the entire in-water construction season. The most vulnerable species and life stages will be Coho fry, juvenile steelhead and adult summer-run steelhead. The most numerous life stages will be juveniles, predominantly steelhead.

Wetland Impacts. Culvert rehabilitation will directly impact less than 9.3sq.m (100 sq. ft.) of existing wetland vegetation. This minor amount of disturbance is not considered significant. The areas around the rehabilitated culverts are expected to revegetate naturally. No mitigation is proposed.

Consultation on Listed Species. A Biological Assessment (BA) for impacts to anadromous fish was submitted to the NOAA Fisheries. The Biological Assessment requests NOAA concurrence that the proposed project may adversely affect the federally-threatened Coho salmon, Chinook salmon, and steelhead trout. The project will have a minimal adverse effect on the Essential Fish Habitat (EFH) for the Coho and Chinook salmon; however, the project is not expected to adversely affect the designated critical habitat for either the Coho or Chinook salmon. The Department of Fish and Game Section 2080.1 Consistency Determination for the listed Coho salmon is in progress.

Species of Concern. Coastal cutthroat trout may be present during diversion and dewatering activities. BMP's and the construction window allowing work within the channel during low flow months will minimize impacts to a less than significant level. No other species of concern are expected to be present at the project site.

To minimize the amount and extent of incidental juvenile fish mortality from construction activities, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within the river and to stabilize bare soil over both the short and long term. Caltrans will ensure that applicable BMP's are implemented to minimize adverse effects to water quality, aquatic habitat and listed Pacific salmonids.

Proposed mitigation measures to reduce project impacts to less than significant levels are discussed in Chapter VI, Environmental Commitments/Mitigation.

Negligible differences to these resources would result from the construction of Alternative 1, the east realignment, since this alternative is less than 30m (100 ft.) east from the preferred western realignment and no additional resources are present within the area.

E. CULTURAL AND HISTORIC RESOURCES

Cultural Resources. A Cultural Resources Study was conducted in compliance with state and federal regulations and policies. These regulations and policies require state agencies to identify historic properties within their jurisdiction and to mitigate any adverse effects projects may have on those properties. The study consisted of a records search by the North Coastal Information Center (NCIC) of the California Historical Resources Information System (CHRIS), field surveys of the project area and consultation with the California Office of Historic Preservation as well as the Blue Lake Rancheria and Table Bluff Reservation representatives. Although reference documents indicate a village site is in the vicinity, field surveys conducted October 3-4, 2002 did not result in the observation of any cultural resources within the project limits.

Historic Properties. A Historic Architectural Survey Report (HASR) was prepared to evaluate nine residential structures located near the project site. The HASR is used to identify significant historic and/or architectural resources within the project area. Seven of the structures surveyed consist of late nineteenth century gabled-farm homes and mid-twentieth century homes. Records indicate these seven structures were constructed between 1880 and 1935. The two remaining structures have been determined not to meet the criteria of being historically significant because one has been so substantially modified and the remaining home does not appear to predate 1957.

The HASR concludes that none of the nine properties appear to meet the criteria for inclusion in the National Register of Historic Places because they lack association with significant historic events or persons, architectural quality or rarity, or integrity.

In the event that archaeological materials are encountered during construction activities, Caltrans' policy requires that work be immediately halted in the area of the find until it can be evaluated by a qualified archaeologist.

F. GEOLOGY/FLOODPLAIN

Setting. The Mad River Bridges are located within the vicinity of the Cascadia Subduction Zone (CSZ) and two local faults, the McKinleyville and Mad River/S (State of California, Department of Transportation, California Seismic Hazard Map 1995 and the State of California, Division of Mines and Geology, Fault Activity Map of California and Adjacent Areas). The two faults are located 0.4 km (0.25 mile) and 2.4 km (1.5 mile) respectively north of the site and both can produce a credible maximum earthquake of 6.75 with a peak acceleration of 0.07g. The CSZ is located approximately 70 km (43.5 miles) west of the site and can produce a credible earthquake of 8.5 with a peak acceleration of 0.02g. No faults are located within the project limits as delineated on the most recent Alquist Priolo Earthquake Zoning Map issued by the State Geologist.

The project site is within recent aged alluvial deposits. These deposits, which are river sediments such as clay and sand, may contain liquefiable soils. Although liquefaction potential for this site is unknown at this time, detailed subsurface investigations to characterize the potential for liquefaction will occur during the design phase of the project.

The area up and downstream of the bridges is currently mapped and designated as a 100-year floodplain by the Federal Emergency Management Agency (FEMA). The new bridges will not increase the 100-year water surface elevation and, therefore, there will be no impact to the base floodplain.

Design Features and Project Effects. The proposed bridges will be designed to withstand the maximum credible seismic event for the project location. The bridges are sized and located so as to not impede or redirect flood flows. Structural foundation design features could include deepened piles that can accommodate extra loads from liquefied soils, pile isolation systems that isolate piles from liquefiable soils or soil densification. Abutments and associated rock slope protection are located above ordinary high water and will not

impede or redirect flood flows. The bridge replacement will not expose people or property to geologic or seismic hazards. Public safety will be improved because the new bridges will be constructed to better withstand seismic, scour and flood events.

G. HAZARDS AND HAZARDOUS MATERIALS

Setting. The northbound bridge was sandblasted and painted in 1964 and 1986. Lead-based primer and an alkyd (synthetic resin) green finish coat were applied to the structure. The southbound bridge was sandblasted and painted in 1958, the year of construction, and again in 1964 and 1985. Lead-based primer, aluminum finish coat, vinyl primer and alkyd green finish were applied to this structure. It is anticipated that remnants of lead-based paint and chromium-containing alkyd green paint are present on the bridge steel and as sandblast waste under the bridges. Original construction plans indicate suspected asbestos containing materials (ACM) were used in the construction of both bridges and specify asbestos sheet packing in details for the northbound bridge. Yellow thermoplastic striping is present on the roadway. The existing residential structure proposed for removal/relocation in the preferred alternative may contain ACM, lead-based paint and mercury electrical switches. The project location is not listed on the current Hazardous Waste and Substance Site List.

Design Features and Project Effects. A Preliminary Site Investigation (PSI) will be conducted prior to construction. The PSI will include all affected properties proposed for new right of way, and will include information as to the potential for hazardous materials to be present within the horizontal and vertical limits of excavation including excavated quantities. All bridge removal and excavation of materials for bridge construction will be temporarily stockpiled at the contractor's staging and work areas to allow for testing. Testing of materials onsite will be conducted and those materials deemed to be hazardous or contaminated wastes will be disposed of properly at an appropriate facility. Contract Special Provisions will require the contractor to disclose the nature of hazardous materials in a site-specific safety plan made available to construction personnel. Results of the PSI may dictate that special provisions also include the methods and procedures to be used during demolition, disposal and new construction. Dust created during pavement grinding will be water dampened and transport vehicles tarped. All notification requirements (and other applicable requirements) of the US Environmental Protection Agency's National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61, Subpart M and/or the North Coast Unified Air Quality Management District will be followed including notifying the AQMD at least 10 days prior to the demolition beginning. Implementation of special provisions and construction methodology will reduce potential impacts to less than significant levels.

H. HYDROLOGY

Setting. Natural hydrological processes and commercially generated gravel extraction operations have contributed to the scoured conditions in the riverbed resulting in the exposure of bridge piers and foundations. The Caltrans 1993 Bridge Report for the northbound bridge indicates a 4.5m (15-ft.) drop in riverbed elevation since bridge

construction in 1929 and a 1.8m (6-ft.) drop in riverbed elevation under the southbound bridge since construction in 1958.

A number of existing culverts carry surface drainage flows underneath the roadway system within the project limits. Seven of these culverts are proposed for rehabilitation (Figure 6, Culvert Location Map). Three are located under the roadway prism on US Route 101 and four are located on Route 200.

Design Features and Project Effects. The proposed bridge design reduces piers for each bridge from four sets to three sets resulting in fewer impediments to natural river flow. Project features to minimize impacts to water quality and hydrology are discussed in the Dewatering Methodology found in Chapter IV, Section B-3. Temporary impacts are discussed in this chapter within the Biology/Water Quality section. After project completion, the affected riverbed areas will be returned to preconstruction hydrological contours. Construction methodology and the implementation of BMP's will reduce impacts to less than significant levels and are found in Chapter VI, Environmental Commitments/Mitigation.

Culvert work proposed is necessary to adequately re-route and carry surface water flows underneath the roadway prism. All applicable temporary construction BMP's will be implemented during culvert rehabilitation work. Proposed culvert work is not expected to significantly impact hydrology at the site.

I. NOISE

Setting. Caltrans uses federal guidelines for assessing traffic noise. These guidelines identify decibel thresholds for various land use or activities for purposes of assessing noise impacts. For example, the guidelines define the optimal threshold for residential areas as Leq 67 dBA that is measured in the primary outdoor use area for a residential parcel, e.g., the backyard or patio. The thresholds, known as Noise Abatement Criteria (NAC) are based upon the noise level of the noisiest hour average (peak hour) in a 24-hour period. The NAC uses a scale known as "Equivalent Noise" or Leq. Leq is the average "A-weighted noise level" (dBA) during a given measurement period. The A-weighted factor reflects the fact that human hearing is less sensitive to low frequencies and extreme high frequencies than to frequencies in the mid-range. The Leq scale is used because most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency added together to generate the sound.

The federal guidelines define traffic noise impacts as "impacts which occur when the predicted traffic noise levels approach or exceed the noise abatement criteria, or when the predicted traffic noise levels substantially exceed the existing noise levels." Caltrans currently defines 66 dBA Leq as "approaching" NAC of 67 dBA Leq for identifying potential significant impacts to sensitive receptors which would include such uses as residential areas, parks, churches, hospitals, schools and libraries.

The Noise Study prepared for the proposed project included seven residences located in close proximity to the project site (Figure 7, Sensitive Noise Receptors). Two residences,

“R6” and “R7”, have driveway access off of Wymore Road. Wymore Road is proposed as the southerly access road to the construction staging area on the southwest quadrant of the project site. Residence “R6” is set back approximately 46m (150 ft.) from the road and Residence “R7” is set back approximately 61m (200 ft.) from the road. In linear distance, Residence “R6” is approximately 0.3 km (0.19 mile) from the bridges and Residence “R7” is approximately 0.2 km (0.13 mile) from the bridges.

Residences “R2”, “R3”, and “R4” have driveway access off of Route 200 (North Bank Road). All three residences are set back approximately 55m (180 ft.) from the road. In addition, these three residences are approximately 170m (560 ft.) from the Central Avenue/Route 200 intersection. In linear distance from the bridges, Residence “R2” is 0.64 km (0.4 mile), Residence “R3” is 0.54 km (0.34 mile), and Residence “R4” is 0.51 km (0.32 mile) distant.

The residence on Central Avenue, “R-1”, is located between the southbound mainline segment and northbound Central Avenue. This residence is about 106m (350 ft.) north of the northern extent of the project limits and about 1.2 km (0.75 mile) from the bridges. The remaining residence, “R5”, would be removed or relocated to accommodate the alignment for the proposed preferred alternative.

Project Features and Project Effects. Based on roadway geometrics of the proposed project and the anticipated future traffic volumes, traffic noise levels were calculated with and without the proposed project using the Sound-32 traffic model. This model takes into consideration such factors as the physical characteristics of how sound travels, atmospheric conditions, potential for sound absorption based on whether the surrounding area contains “hard” or “soft” surfaces, the presence of obstacles and barriers that could deflect or absorb sound, and the potential for the sound to be reflected.

The model uses increased traffic volumes for the year 2025 projections because although the project would not increase capacity and, therefore, construction of either alternative would not directly result in an increase in traffic volume, traffic volumes would be expected to increase as a result of increased population growth with or without the project.

Table 6 shows the results of the traffic noise modeling for the existing noise level and the projections the year 2025 for each alternative including the No Build Alternative. Sound pressure levels are logarithmic units, measuring the change in acoustical energy levels that cannot be added algebraically. A 3 dBA difference is barely perceptible to human hearing. A 5 dBA difference would be readily perceptible and a 10 dBA difference would be perceived as twice (or half) as loud.

Year 2025 No Build. Under the No Build Alternative, 2025 noise levels would be slightly higher than existing due to normal traffic increases resulting from expected population increases. Without the project, three homes (“R1”, “R2”, and “R5”) approach or exceed the NAC.

Year 2025 West Alternative. Under the preferred alternative, 2025 noise levels would be slightly lower or remain the same at the homes to the east of US Route 101 (“R2”, “R3”, “R4”, “R6” and “R7”) as compared to the 2025 No Build Alternative. With the construction of this alternative, one home (“R1”) would approach the NAC.

Year 2025 East Alternative. Under the East Alternative, 2025 noise levels would increase slightly at five homes located near the project as compared to the 2025 No Build Alternative. Table 6 shows the changes in noise levels associated with the proposed project. Three of these homes (“R1”, “R2” and “R5”) would approach or exceed the NAC.

**Table 6
Modeled Noise Levels**

Receptor ID	Existing Noise Level	2025 No Build dBA	2025 West Alignment		NAC Criteria Exceeded*	2025 East Alignment		NAC Criteria Exceeded*
			dBA	Increase		dBA	Increase	
R1	63	66	66	0	Yes	66	0	Yes
R2	63	66	65	-1	No	66	1	Yes
R3	61	64	64	0	No	65	1	No
R4	60	63	62	-1	No	63	1	No
R5**	67	70	N/A	N/A	N/A	70	0	Yes
R6	60	63	63	0	No	64	1	No
R7	58	61	61	0	No	61	0	No

*Note: Mitigation to be considered when predicted noise levels approach or exceed NAC (for residential use mitigation must be considered for 66 dBA Leq and above.

**Note: Residence “R5” is “Not Applicable” because the preferred alternative proposes its removal/relocation.

Temporary Impacts. Noise from construction activities will occur with varying intensities and duration during mobilization, clearing and grubbing, earthwork, foundations, base preparation, paving, and cleanup activities. No single location will experience a long-term period of construction noise. Construction activities would typically occur during normal working hours.

Construction noise from equipment is unavoidable and is regulated by Caltrans Standard Specifications Section 7-1.011, “Sound Control Requirements.” These requirements state that noise levels generated during construction shall comply with applicable local, state and federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers’ specifications. Additional measures to minimize noise impact levels would include minimizing nighttime, weekend and holiday work; construction staging and storage areas located on the west side of the bridges furthest away from residences; shielding and locating stationary construction equipment (e.g., compressors, generators) as far away as feasible from residences; and holding community meetings to explain to area residents the

construction work schedule and control measures to be taken to reduce the impacts of construction work. No other mitigation is proposed for temporary impacts.

Abatement/Mitigation. Noise abatement is only considered where noise impacts exceeding the NAC are predicted to sensitive receptors and where frequent human use occurs and a lowered noise level would be of benefit. Once an impact has been identified, a determination of the feasibility and reasonableness of abatement is considered.

Feasibility is defined as an engineering consideration. A minimum of 5 dBA noise reduction must be achieved at the impacted receiver in order for the proposed noise abatement measure to be considered feasible. Topography, access requirements for driveways, presence of local cross streets, other noise sources in the area and safety considerations are considered in determining feasibility.

Reasonableness of noise abatement is more subjective than the determination of feasibility. The overall reasonableness of noise abatement is determined by considering several factors that include, but are not limited to: costs; absolute noise levels; change in noise levels; noise abatement benefits; date of development along the highway; life cycle of abatement measures; environmental impacts of abatement construction; views of impacted residents; public and local agencies input; and social, economic, legal and technological factors.

With the construction of the western alternative, the “R1” residence located on Central Avenue would approach the NAC level of Leq 67 dBA. Abatement was analyzed and found not to be feasible because the elevation of the home exceeds the highway elevation rendering a barrier wall ineffective in reducing traffic noise.

With the construction of the eastern alternative, three homes approach or exceed the NAC of Leq 67 dBA. Receptor “R1” is located in the area between Route 101 and the Central Avenue northbound exit ramp. Abatement was analyzed and it was found not to be feasible to construct a barrier at this location due to the topography. Receptor “R2” is located to the east of the existing Route 101 and north of Route 200. Abatement was analyzed and it was found not to be feasible to construct a barrier at this location due to the topography. Receptor “R5” is located to the west of the existing Route 101 south of the Mad River Bridge. It is unreasonable from a cost standpoint to construct a soundwall within the right-of-way to protect only one residence.

J. POPULATION AND HOUSING

Setting. The preferred alternative would affect one existing residential structure situated on the southwest bank of the river. The residence is rental property and was moved to its present location in a previous acquisition required in the late 1950’s by Caltrans to construct the existing southbound bridge. Although the structure was relocated onto the owner’s property, access to this area is over an unpaved road owned by Caltrans. An easement was granted to the property owners for access.

At the time of appraisal/acquisition for the project, Caltrans Right of Way will prepare a cost analysis and negotiate with the property owners to determine if the residence will be relocated again or acquired in place and demolished. The analysis will include costs associated with relocating the residence further west, the re-establishment of utility hook-ups and new septic system. Roadway access would also be included in the analysis.

The eastern realignment alternative would not require the removal or relocation of any residences.

Project Features and Effects. Construction of the proposed project will require the relocation or removal of the residence. If the residence is relocated, the proposed project will not decrease the availability of housing in the area and will only temporarily displace occupants. If it is negotiated with the property owner that the house be removed, the residence would be removed from the housing market and the occupants would be displaced.

Current information indicates the residence is occupied by at least one student. In circumstances where Caltrans displaces housing due to construction, it has developed a relocation assistance program (RAP) for single-family residences used as rentals to college students. The renter(s) may be eligible for RAP benefits at the time of acquisition to assist them in locating replacement housing. The removal of the residence will have negligible impacts on the rental housing market due to the extensive amount available in Arcata and surrounding areas provided for Humboldt State University students.

K. RECREATION

Setting. The Mad River primarily supports fishing and boating activities; however, in the immediate project area, no public access to the river is available because private property surrounds the project site. A Caltrans' unpaved maintenance road, which doubles as access to the residence on the southwest bank, is used by maintenance crews. No other public roads lead directly to the river at the project site. No park, parking facilities, or restrooms exist. Beneath the bridges, chain link fencing has been cut and minor amounts of refuse indicate trespassing occurs.

Project Effects. Since no opportunity to access the river currently exists at the project site, the proposed project will have no impact on access to the river. However, the proposed project will temporarily impact recreational use of the river during construction. Construction within the river channel would likely occur from June 16 through October 14 for the life of the project. During this time, heavy construction equipment, together with river diversion, would limit the area available for recreational users. However, during the summer low flow season, some of the recreational activities, such as boating and fishing, are already limited due to lower water flows. Since the recreational uses on the river will remain unchanged from the present once construction is complete, the temporary impacts are less than significant. Additionally, after project construction, there would be less barriers in the river and a net increase of 53.8 sq.m (580 sq. ft.) in river area will be available due to the decrease in the number and size of the piers.

L. TRANSPORTATION/TRAFFIC

Setting. The Mad River Bridges are two separate structures carrying two lanes of traffic each northbound and southbound on US Route 101. The project covers a 1.9 km (1.2 mile) length on US Route 101. Within the project limits are the Central Avenue on- and off-ramps to the community of McKinleyville and the northbound Central Avenue off-ramp intersection with Route 200. Table 6 below shows current year, construction year and expected 20-year traffic volumes for the project vicinity.

Design Features and Project Effects. Design features of the Route 101/Route 200 intersection reconfiguration and bridge replacement address geometric, scour and seismic guidelines and are discussed throughout the document. The bridges are designed to handle the projected traffic usage both during construction and post project.

To address temporary construction impacts, a Transportation Management Plan (TMP) will be implemented to facilitate the movement of traffic, including emergency vehicles, through detours, lane and ramp closures. The TMP will also consist of a public awareness campaign and Construction Zone Enhanced Enforcement Program (COZEEP) by the California Highway Patrol during construction. All traffic lanes will be available during peak hour use. Any highway closures would occur at night.

No project component is anticipated to cause any permanent change in capacity of the system or any change in existing travel patterns, and therefore, will not result in any growth-inducing impacts. The increase in traffic as noted in Table 7 is a result of increased population as well as anticipating that the average number of trips taken per vehicle will continue to increase.

The proposed project does not conflict with any adopted policies, plans or programs for alternative transportation. The project is designed to accommodate both pedestrians and bicyclists, and is consistent with the Americans With Disabilities Act for handicap access.

Table 7
Traffic Volumes

Annual Average Daily Trips (AADT)	US Rt. 101 (PM 89.4/90.2)	Rt. 200 (PM 0.0/0.83)	Central Ave. NB off-ramp	Central Ave. SB on-ramp	US Rt. 101 on-ramp from Rt. 200/Central Ave.
Year 2003	34,000	2,400	7,600	6,600	175
Year 2006	36,000	2,500	8,000	7,100	190
Year 2026	52,000	3,200	9,500	10,800	300
Peak Hour					
Year 2003	4,265	305	1,060	600	25
Year 2006	4,530	330	1,130	640	30
Year 2026	5,920	425	1,320	980	50

Caltrans D3 Office of Travel Forecasting and Modeling

M. UTILITIES

Setting. The following utilities are located within the proposed new right of way and would require relocation:

- ◆ A PG&E 203mm (8-in.) natural gas pipeline 622m (2,040 linear ft.) of which a portion is attached to the southbound bridge
- ◆ A PG&E 12.5. kv electrical overhead crossing in the southern portion of the project;
- ◆ A SBC Pacific Bell overhead copper telephone line crossing diagonally across US Route 101 from the southbound Central Avenue on-ramp to north of the Route 200 intersection; and,
- ◆ A Cox Cable overhead line occupying joint poles with Pacific Bell lines.

Design Features and Project Effects. A utility easement for relocation of the gas pipeline will require acquisition from the adjacent private property owners. The other utilities will be relocated within state right of way. All utility relocation will be made pursuant to the North Region Policy and Procedures for Utility Verification and Relocation (June 7, 2000). Interruptions to existing utilities during construction would be temporary and are not expected to be significant.

VI. ENVIRONMENTAL COMMITMENTS/MITIGATION

The following commitments, design features, and mitigation measures are proposed to reduce project impacts to less than significant levels.

A. Biological Resources.

The following measures are proposed to reduce the effect of potential project impacts to listed species, designated critical habitat and essential fish habitat:

- ◆ All work within the river channel may occur only from June 16 and continue through October 14 of each construction year when the river is at its lowest and the least amount of fish activity occurs.
- ◆ A demolition plan shall be prepared and implemented including provisions specifying that no blasting will occur and no debris shall be allowed to fall into the river.
- ◆ Diversion and de-watering will utilize clean gravel, water bladders, or sand bags. Upon completion, all material used for diversion will be removed from the bed and banks of the river. Pump intakes, outside of isolated, subsurface cofferdams will be screened to prevent the pickup of juvenile salmonids. Water pumped from the work site shall receive appropriate treatment, as required by the Regional Water Quality Control Board, prior to being discharged onto the ground or into the river.
- ◆ Upon project completion, all disturbed gravel bars will be returned to pre-construction conditions to prevent fish impoundment.

- ◆ No concrete washing or water from concrete will be allowed to flow into the Mad River and no concrete will be poured within flowing water.
- ◆ Temporary construction BMP's for the project will be implemented in accordance with the Contractor's approved Storm Water Pollution Prevent Plan (SWPPP). The BMP's may include but are not limited to: mulches, silt fences, fiber rolls, straw bales, and sandbag barriers, stabilized access roads and construction entrances/exits, check dams, sediment basins, and lined concrete washout facilities. The Contractor will prepare a SWPPP in accordance with the Caltrans Storm Water Quality Handbooks specifying which BMP's are proposed for use. The Resident Engineer must approve the SWPPP before it can be implemented.
- ◆ BMP's to control silt and erosion of exposed soils are proposed for use.
- ◆ Construction and staging/storage disturbance will be restricted to the minimum necessary.
- ◆ Access roads and staging areas constructed will be removed upon completion of the project and revegetated to pre-construction conditions.
- ◆ The site will be returned to its pre-construction condition by replanting and revegetating all affected areas. The Office of Landscape Architecture will recommend suitable replacement planting and revegetation for the riparian corridor, the southbound Central Avenue on-ramp area where the mature Monterey Pines must be removed in addition to access roads and staging areas.

B. Agricultural Resources

The project will require 1.09ha (2.7 acres) of new right of way west of the existing bridges on agriculturally-zoned lands. To address the County's policies of no net loss of agricultural lands (revenue) and to reduce project impacts on agricultural resources to less than significant levels, Caltrans proposes two opportunities to mitigate project impacts to these resources. Once the project is complete and the bridges are shifted west, the eastern alignment will also shift west freeing approximately .64ha (1.6 acres) of land. These lands are within the same private ownership as the affected realigned lands and may be returned to agricultural use. If the .64ha (1.6 acre) were returned to agricultural use, .4ha (1acre) of agricultural land would be removed from agricultural production. Due to the difficulties of obtaining small parcels of land in the area, the contribution of funds to a land trust comparable to the market value of .4ha (1 acre) being displaced may be possible.

C. Socioeconomic

- ◆ All traffic lanes would be available during peak hour use and any complete highway closures would occur at night.

- ◆ Noise levels generated during construction shall comply with applicable local, state and federal regulations and all equipment shall be fitted with adequate mufflers according to the manufacturer's specifications.
- ◆ Stationary construction equipment will be located and shielded as far away as feasible from residences.

VII. CONSULTATION/COORDINATION

Consultation and coordination has been conducted with the following entities:

- ◆ NOAA Fisheries (US National Marine Fisheries Service)
- ◆ California Department of Fish and Game
- ◆ California Coastal Commission
- ◆ State Office of Historic Preservation
- ◆ Humboldt County Planning Division
- ◆ Native American consultation with Table Bluff Reservation and Blue Lake Rancheria
- ◆ Humboldt County Historical Society
- ◆ Humboldt County Public Works Department

VIII. PUBLIC INVOLVEMENT

A public meeting was held August 19, 1998 at the time the project was programmed at Azalea Hall in McKinleyville. Caltrans personnel displayed maps and plans of the proposed project alternatives and were available to answer questions.

The project as proposed was shown on a new alignment to facilitate the use of the existing bridges during construction. Alternatives presented included a new alignment west of the existing bridges and a new alignment east of the existing bridges. Improvements to the Central Avenue on- and off-ramps were presented along with a reconfiguration of the northbound Central Avenue intersection with Route 200.

A total of 26 people signed in at the meeting and 13 comment cards and letters were received. Seven comments were received regarding concerns of providing adequate pedestrian and bicycle access on the bridges; seven comments were received preferring the west alternative to allow more room to upgrade the northbound Central Avenue/Route 200 intersection; two comments were received to retain one of the bridges for pedestrian/bicycle/equestrian/farm equipment uses; and one comment was received in favor of the east alternative.

Another public meeting is scheduled to be held during the public circulation period of this document. The meeting will be advertised in local newspapers as to its date and time. It is anticipated the public meeting will be held in December 2003.

IX. LIST OF PREPARERS

The following personnel were primarily responsible for the preparation of this Draft Initial Study:

Deborah L. Harmon	Environmental Management Chief
Linda Pirola	Environmental Coordinator
Melinda Molnar	Biology
Chris Holm	NPDES – Water Quality
Laura Lazzarotto	Landscape Architecture
Andrea Galvin	Architectural History
Sara Atchley	Cultural Resources
Isaac Leyva	Geology
Jon Hedlund	Hazardous Waste/Materials
Sebastian Cohen	Hydrology
Donald D. Jones, P.E.	Floodplain Report, PSOMAS Consultants
Keith Pommerenck	Noise

Attachment A

Environmental Significance Checklist

Environmental Significance Checklist

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

V. CULTURAL RESOURCES -- Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VI. GEOLOGY AND SOILS -- Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ii) Strong seismic ground shaking?

☐
☐
☒
☐

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------------	--	------------------------------------	--------------

iii) Seismic-related ground failure, including liquefaction?

☐
☐
☒
☐

iv) Landslides?

☐
☐
☐
☒

b) Result in substantial soil erosion or the loss of topsoil?

☐
☐
☒
☐

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

☐
☐
☒
☐

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

☐
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e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

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VII. HAZARDS AND HAZARDOUS MATERIALS –

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

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b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

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d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

☐
☐
☐
☒

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

result in flooding on- or off-site?

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XI. NOISE –

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XII. POPULATION AND HOUSING -- Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

elsewhere?

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

XIII. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. RECREATION –

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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XV. TRANSPORTATION/TRAFFIC -- Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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on roads, or congestion at intersections)?

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVI. UTILITIES AND SERVICE SYSTEMS –

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVII. MANDATORY FINDINGS OF SIGNIFICANCE –

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Attachment B

Figures 1 through 7